REMARKS

STATUS OF CLAIMS

Claims 1-3, 5, 6, and 8-10 are now pending in this application. Claims 4 and 7 have been canceled with most of the subject matter of claim 4 now appearing in amended claim 1. As the present amendment clearly will not require a new search, reduces issues on appeal, and does not introduce any other new examination requirements, entry thereof is respectfully requested

REJECTION OF CLAIMS 1 and 3-10 UNDER 35 U.S.C. § 103

Claims 1 and 3-10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Justel et al. (USPN 6,084,250, hereinafter "Justel") in view of Doxsee et al. (US 2004/0159846, hereinafter "Doxsee"), and further in view of Atagi (US 2002/0070682).

The rejections of canceled claims 4 and 7 are moot and the rejections of claims 1, 3, 5, 6, and 8-10 are respectfully traversed.

Claim 1 has been amended to incorporate much of the subject matter of canceled claim 4 so that it now further requires that the solid material illuminant having an absorbent for said blue-violet light containing Sm of 0.01 to 10 mol% also "contains Sc, Y or a typical element as cations, and contains at least one of N and S as anions." None of the relied on references to Justel, Doxsee, and Atagi teach or suggest the subject matter of amended claim 1.

With regard to canceled claim 4 that included "O" as well as "N and S as anions," the outstanding Action placed reliance on the teachings of "Column 4, Table 2 line 25-26" of Justel at the bottom of page 4. This reliance statement appears[1] to be based on a disclosure of phosphors by Justel that contain "Y" and "O" components. However, there is no teaching or suggestion here or elsewhere in Justel to substitute "N" or "S" for "O" or to use Sc. The teachings of Doxsee and Atagai do not cure this deficiency of Justel.

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[1] The term "appears" is used because a typographical error is evident because Table 2 appears in column 5, not column 4, and numbered line 25 of column 5 is blank and numbered line 26 is a heading ("EXAMPLE 2"). On the other hand, column 4 includes Table 1, not 2, and Table 1 has numbered lines that appear to be lines 24-29 that include phosphors that include "Y" and "O" components such as $Y_2O_2A:Eu^{3+}$ at numbered line 24, $YVO_4:Eu^{3+}$ at numbered line 25, etc. To the extent that one of the phosphors of Table 2 also mentions "YVO_4" it is no more relevant than the "$YVO_4:Eu^{3+}$" mentioned above as to Table 1.

In particular, all of the embodiments of Atagi include metal oxides along with the oxide of the "emissive element" that can be an **oxide** of Sm of 0.01 to 10 mol% as taught by Atagi. See paragraphs [0016], [0072], [0108], [0113], [0114], [0120], and [0125]. Atagi clearly does not teach or suggest the amended claim 1 required "at least one of N and S as anions." Similarly, the embodiment of paragraph [0033] of Doxsee that includes the teaching that Sm can be used in the second phosphor includes "O," but not the required "at least one of N and S as anions."

The amended claim 1 requirement that the solid material illuminant contains "Sc, Y or typical element as cations" provides the advantages of improving the luminous efficiency of the emission center material (note the specification at page 8, line 27-page 9, line 1, for example). In this regard, the excitation light from the blue-violet light-emission element is passed through at low loss. The use of the claimed anions provides that the crystal fields of the Sm light absorbent and the illuminant are controlled for optimizing absorption and emission wavelengths, particularly in the case where the medium contains N as the anion. In this last regard, an illuminant utilizing chemical stability and low-loss property of a nitride host material can be utilized, so that an efficient light-emitting device further improved in absorption efficiency of the Sm light absorbent and luminous efficiency of the illuminant can be implemented. Note page 9, lines 1-5 of the specification for example.

In addition, it is again noted that the Examiner maintains that Justel and Doxsee have teaching that in combination teach all the features of previously presented independent claim 1, except a solid material illuminant having an absorbent for the blue-violet light containing Sm of 0.01 to 10 mol%. To provide the required reasoning[2] for modifying Justel by the teachings of Doxsee, page 3 of the outstanding Action suggested that "it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the light-emitting device of Justel wherein the absorbent containing Sm, wherein said solid material illuminant radiates light by inner shell transition of Sm by blue-violet light absorption in order to provide a device which can

[2] As recently noted by the Supreme Court, "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." KSR Int'l v. Teleflex Inc., 127 S.Ct. 1727, 82 USPQ.2d 1385, 1396 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)).

extend the wavelength range of the LED and produce "bight" white light as taught by Doxsee et al."

First, the "white" sought by Doxsee is a "milkey white" and not a "bight" white light as incorrectly alleged. See paragraph [0027] of Doxsee stating that the need being addressed by Doxsee relates "to a light having a milky white color."

Second, in order to achieve this desired result (light having a "milky white color"), paragraph [0033] of Doxsee teaches the use of "an LED having an emission centered at around 430 nm" along with the use of a specific "phosphor conversion material blend 12." This blend 12 "comprises a blend of $Sr_4Al_{14}O_{25}:Eu^{2+}$ (SAE) and a second phosphor having the general formula $(Tb_{1-x-y}A_xRE_y)_3D_zO_{12}$, where A is a member selected from the group consisting of Y, La, Gd, and Sm; RE is a member selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Dy, Ho, Er, Tm, Yb, and Lu; D is a member selected from the group consisting of Al, Ga, and In; x is in the range from 0 to about 0.5, preferably from 0 to about 0.3, more preferably from 0 to about 0.2; and y is in the range from about 0.00 to about 0.2, preferably from about 0.005 to about 0.1, more preferably from about 0.005 to about 0.07; and z is in the range from about 4 to about 5, preferably from about 4.5 to 5, more preferably from about 4.6 to less than about 5. Thus, while a phosphor that could contain Sm_x (x from 0 to about 0.5, preferably from 0 to about 0.3, more preferably from 0 to about 0.2) or Sm_y (y is in the range from about 0.00 to about 0.2, preferably from about 0.005 to about 0.1, more preferably from about 0.005 to about 0.07) is taught for use in this embodiment to provide the desired "milky white" color, no phosphor containing an **oxide** of Sm_x or Sm_y is taught or remotely suggested as an alternative to Sm_x or Sm_y here or elsewhere in Doxsee.

Therefore, Doxsee is very clear that it is Sm (not an **oxide** of Sm) that is to be used as "A" or "RE" in the $(Tb_{1-x-y}A_xRE_y)_3D_zO_{12}$ phosphor that is blended with the phosphor $Sr_4Al_{14}O_{25}:Eu^{2+}$ (SAE) and that the "LED having an emission centered at around 430 nm" is further to be used with this blended phosphor to produce the desired "milky white" light.

This being the case, the last paragraph on page 4 of the outstanding Action lacks the required[3] "articulated reasoning with some rational underpinning" to explain why the artisan who is first alleged to be seeking the desired "milky white" color of the visible light taught by Doxsee would abandon the required phosphor blend and wavelength of light taught by Doxsee to be required to achieve it based on the completely unrelated teachings of Atagi of using an "emissive element" that includes an **oxide** of Sm (not the Sm containing phosphor taught by Doxsee) that must be exposed to ultraviolet light with the wavelength of 254 nm (not light of 430 nm as in Doxsee) to provide longer wavelength **ultraviolet** light (not "**milky white**" colored light).

Clearly, those skilled in the art seeking the "**milky white**" colored light taught by Doxsee would realize that they must use the phosphors and light wavelength taught by Doxsee while those skilled in the art seeking a longer wavelength of **ultraviolet** light would realize that they must use the different "emissive element" that includes an **oxide** of Sm (not the Sm containing phosphor taught by Doxsee) taught by Atagi to be xposed to ultraviolet light with the wavelength of 254 nm (not light of 430 nm as in Doxsee).

Accordingly, in view of the teachings of Doxsee and those of Atagi considered as controlling precedent[4] requires that they be considered, there is no reasonable basis with any rational underpinning[5] presented in the outstanding Action to support the Examiner's apparent illogical position that the artisan would modify the Sm containing phosphor ($(Tb_{1-x-y}A_xRE_y)_3D_zO_{12}$ having Sm as "A" or "RE") in some manner taught by the Atagi "emissive element" (that includes an **oxide** of Sm in the range of 0.01 to 10 mol%), as well as modifying the Doxsee taught "LED having an emission centered at around 430 nm" to some how operate at the Atagi "emissive element" wavelength of 254 nm, while reasonably believing that the thus modified Doxsee device could successfully produce the desired "milky white" light along with the Atagi longer wavelength of **ultraviolet** light.

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[3] See footnote 2.
[4] *In re Kotzab* 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("[reference] statements cannot be viewed in the abstract" because "they must be considered in the context of the teaching of the entire reference."). This is not new law, note *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984) requiring "a fair reading of the prior art reference as a whole."
[5] See footnote 2.

At the very least, the modification the PTO proposes must have a reasonable expectation for success, *see In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Also, it is well established that the PTO cannot "indiscriminately" combine reference teachings taken out of context as has been done in the outstanding Action. *See In re Ehrreich,* 590 F2d 902, 200 USPQ 504 (CCPA, 1979). In this last regard, instead of such indiscriminate combining of reference teachings taken out of context, "there must be some logical reason apparent from positive, concrete evidence of record which justifies a combination of primary and second references," *see In re Regel*, 526 F.2d 1399, 1403 n.6, 188 USPQ 136, 139 n.6 (CCPA 1975).

In view of the above, independent claim 1 and claims 3, 5, 6, and 8-10 that ultimately depend on independent claim 1 are respectfully submitted to be clearly patentable over the reasonable teachings and fair suggestions of Justel, Doxsee and Atagi. Accordingly, the withdrawal of the rejection of claims 1, 3, 5, 6, and 8-10 under 35 U.S.C. § 103(a) as being unpatentable over Justel in view of Doxsee and further in view of Atagi is respectfully requested.

REJECTION OF CLAIM 2 UNDER 35 U.S.C. § 103

Claim 2 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Justel in view of Doxsee and Atagi, as applied to claim 1, and further in view of Maede et al. (JP 2003-110150, hereinafter "Maede").

Claim 2 depends directly from independent claim 1 and Maede does not remedy the above-noted deficiencies of Justel in view of Doxsee in further view of Atagi with respect to amended independent claim 1. Therefore, claim 2 is believed to be patentable over Justel, Doxsee, Atagi and Maede for at least the reasons noted above as to amended claim 1.

CONCLUSION

In view of the above, applicants believe the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond F. Cardillo, Jr., (Reg. No. 40,440) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By _____

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